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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,745	03/26/2001	Mamoru Sawada	1-120	6536

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LAW OFFICES OF DAVID G. POSZ  
2000 L STREET, N.W.  
SUITE 200  
WASHINGTON, DC 20036

EXAMINER
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LE, DANG D

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 12/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/816,745	SAWADA ET AL.
	Examiner	Art Unit
	Dang D Le	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 17 October 2002.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-6 and 8-10 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-6 and 8-10 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)      4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_ .

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)      5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ .      6) Other: \_\_\_\_\_ .

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-6 and 8-10 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-5 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 1 and 10 recite the limitation "the motor coil" in line 12 and 11, respectively. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unsworth et al. in view of Luedtke et al. and further in view of Otake.

Regarding claim 1, Unsworth et al. show a motor coil-shorting detecting unit, comprising:

- A motor (12) including a rotor having a wire with a plurality of coils (20, 22, 24 which can be rotor windings, column 5, line 31) wrapped around said rotor;
- A detecting means (10, Figure 1) that detects a current or a voltage supplied to the motor from a power source (15, through lines 14, 16, 18);
- A determining means (36) that determines an occurrence of a short of at least one of the plurality of the motor coils.

Unsworth et al. do not show:

- A commutator provided on the rotor;
- A brush that slides over the commutator, electric power being supplied to the rotor from an external power source via the commutator and brush to rotate the rotor.
- A determining means that determines an occurrence of a short by determining that the detected voltage or current obtained by the detecting means exhibits a larger fluctuation range than the respective pre-store voltage or current, said pre-stored voltage or current representative of that supplied from the external power source during a normal state.

Luedtke et al. show a commutator (22, Figures 1-2) provided on the rotor and a brush (24) that slides over the commutator, electric power being supplied to the rotor from an external power source (through cable 40) via the commutator and brush to rotate the rotor for the purpose of making a brush motor.

Otake shows a determining means (13) that determines a load imbalance by determining that the detected voltage or current obtained by the detecting means

exhibits a larger fluctuation (Figures 3 and 5) range than the respective pre-store voltage or current ( $T_{th}$ ), said pre-stored voltage or current representative of that supplied from the external power source during a normal state for the purpose of the motor operation.

Since Unsworth et al., Luedtke et al. and Otake are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to wrap a wire around the rotor, to provide a commutator on the rotor with a brush that slides over the commutator to supply electric power to the rotor from an external power source via the commutator and brush to rotate the rotor and use a determining means that determines an occurrence of a short of at least one of the plurality of the motor coils by determining that the detected voltage or current obtained by the detecting means exhibits a larger fluctuation range than the respective pre-store voltage or current, said pre-stored voltage or current representative of that supplied from the external power source during a normal state as respectively taught by Luedtke et al. and Otake for the purposes discussed above.

Regarding claim 2, it is noted that Unsworth et al. also show the determining means determining the short based on ripple variations of the current or voltage supplied to the motor from the external power source, the ripple variations being detected by the detecting means (Figure 5).

7. Claims 3-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unsworth et al. in view of Luedtke et al. and Otake and further in view of Discenzo et al.

Regarding claim 3, the unit of Unsworth et al. modified by Luedtke et al. and Otake includes all of the limitations of the claimed invention except for the determining means including a temperature correction circuit for correcting the pre-stored current or voltage according to a circumferential temperature (82, 84, 86).

Discenzo et al. show the determining means including a temperature correction circuit for correcting the pre-stored current or voltage according to a circumferential temperature (82, 84, 86) for the purpose of controlling the motor operation.

Since Unsworth et al., Luedtke et al., Otake and Discenzo et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include in the determining means a temperature correction circuit for correcting the pre-stored current or voltage according to a circumferential temperature as taught by Discenzo et al. for the purpose discussed above.

Regarding claim 4, it is noted that Discenzo et al. also show an abnormality informing means for informing a user when the short is determined by the determining means.

Regarding claim 5, it is noted that Otake also shows a stop control means for stopping power supply to the motor when the short is determined by the determining means.

Regarding claim 6, the claim is similar to claim 1 except that it further recites an indication device responsive to said determining device that indicates when said short exists. It is noted that Discenzo et al. also show an indication device (42) responsive to said determining device that indicates when said short exists. As a result, claim 6 is also rejected.

Regarding claim 8, the claim is a combination of claims 1, 4 and 5. As a result, claim 8 is also rejected.

Regarding claim 9, it is noted that Discenzo et al. also show the determining means determining that the short has occurred when a current route changes among the coils.

Regarding claim 10, the claim is a combination of claims 1 through 5. As a result, the claim is also rejected.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Information on How to Contact USPTO***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL  
December 6, 2002

